

## "A wearables transition in rehabilitation and assistance in neurological conditions"

## José Luis Pons, Ph.D.

Scientific Chair, Legs + Walking Lab, Shirley Ryan Ability Lab Professor, Dept. of PM&R, Feinberg School of Medicine Dept. of Biomedical Engineering Dept. of Mechanical Engineering Northwestern University

Wearable exoskeletal robotics and neuroprosthetics can play a role in rehabilitation and functional compensation in a number of neurological conditions, such as hemiplegia post stroke, paraplegia or quadriplegia post SCI, which lead to severe motor impairments. In addition to classical intensive training, these technologies can be used for assessment, to establish causality between motor intent and assistance and to effectively alter neuromechanics. We will



illustrate a transition from hard rehabilitation robotics to implantable neuroprosthetics and show how they can be used to promote neuromechanical adaptations and functional improvements. This will be illustrated through this transition applied to managing pathological tremors resulting from Parkinson's disease and essential tremor.

> Friday, February 10, 2023 1:00 p.m. – 2:30 p.m. UT Austin campus, EER 1.518 Hosted by José del R. Millán, Ph.D. Contact CARE: utcareinitiative@austin.utexas.edu